

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format comprising:
 - a sentence lexer for converting a natural language sentence into a sequence of ontological entities that are tagged with part-of-speech information; and
 - a parser for converting the sequence of ontological entities into predicate structures using a two-stage process that analyzes the grammatical structure of the natural language sentence; and binds arguments into predicates.
2. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 1, wherein said sentence lexer comprises:
 - a document iterator that receives text input and outputs individual sentences;
 - a lexer that receives said individual sentences from said ~~sentence lexer~~document iterator and outputs individual words; and
 - an ontology that receives said individual words from said lexer and returns ontological entities or ~~a-words~~ tagged with default assumptions about an ontological status of said individual words; to said lexer.
3. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 2, further comprising lexer filters for modifying said individual sentences based on word meanings.
4. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 3, wherein said lexer filters ~~may~~ comprise at least one of: a noun filter, an adjective filter, an adverb filter, a modal verb filter, a stop word filter, a pseudo-predicate filter, and a pseudo-concept filter.

5. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 4, wherein said stop word filter removes stop words from said individual sentences.

6. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 4, wherein said adjective filter removes lexemes representing adjectives from said individual sentences.

7. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 4, wherein said noun filter groups proper nouns into single lexical nouns.

8. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 4, wherein said modal verb filter removes modal verbs from objects of said individual sentences.

9. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 4, wherein said adverb filter removes lexemes containing adverb concepts from said individual sentences.

10. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 4, wherein said pseudo-predicate filter removes verbs from queries.

11. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 4, wherein said pseudo-concept filter removes concepts from queries.

12. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 1, wherein said parser comprises:

a sentence receiver that receives sentences including ontological entities from said sentence lexer;

a parser component that parses said sentences, received by said sentence receiver, into parse trees representing concepts in a respective sentence received by said sentence receiver; and

a parse tree converter that receives the output of said parser component and converts said parse trees into predicates.

13. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 12, wherein said parser component further comprises:

parser filters operating on said predicates to remove erroneous predicates.

14. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 12, wherein said parser component looks ahead at least one word, scans input from left-to-right, and constructs said parse tree.

15. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 13, wherein said parser filters remove parse trees that violate one of statistical and ontological criteria for well-formedness.

16. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 15, wherein said parser filters include a selectional restriction filter and a parse probability filter.

17. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 16, wherein said selectional restriction

filter vetoes parse trees having conflicts between selectional features of concepts serving as arguments to a second concept and restrictions of said second concept.

18. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 2, wherein said ontology is a parameterized ontology that assigns numbers to ~~said~~ concepts.

19. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 18, wherein said numbers can be subtracted to determine if features are in agreement, wherein a non-negative number indicates agreement.

20. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 18, wherein said numbers can be subtracted to determine if features are in agreement, wherein a negative number indicates feature incompatibility.

21. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 16, wherein said parse probability filter vetoes parse trees that fall below a minimum probability for semantic interpretation.

22. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 1, wherein said system is modular to permit the use of any part-of-speech-tagged ontology.

23. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 18, wherein in said parameterized ontology, each data structure includes at least one integer value, where groups of digits of said integers value correspond to a-specific branches taken at corresponding levels in ~~said a~~ parse tree.

24. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 23, wherein said ~~parameterization~~ parameterized ontology is encoded in two ways: a base of said integer value bounds a number of branches extending from a root node of said ontology, while a number of digits in the integer value bounds a potential depths of said parse tree.

25. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 23, wherein a first digit difference between two nodes provides a measure of the degree of ontological proximity of two concepts.

26. (Currently Amended) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim ~~22~~23, wherein said parse trees ~~are~~is represented by modified hexadecimal digits that have an octet of hexadecimal pairs to provide eight ontological levels and a branching factor at each node of 256.

27. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format comprising the steps of:

converting a natural language sentence into a sequence of ontological entities that are tagged with part-of-speech information; and

converting said sequence of ontological entities into predicate structures using a two-stage process that analyzes the grammatical structure of a the natural language sentence; and binds arguments into predicates.

28. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 27, further comprising the step of modifying said natural language sentences based on word meanings.

29. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 27, further comprising the steps of:

receiving sentences including ontological entities;

parsing said sentences including ontological entities into parse trees representing concepts in a the corresponding sentence including ontological entities; and

converting said parse trees into predicates.

30. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 27, wherein ~~said~~ the step of parsing comprises the step of looking ahead one word, scanning input from left-to-right, and constructing said parse tree.

31. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 27, further comprising the step of removing parse trees that violate one of ~~the~~ statistical and ontological criteria for well-formedness.

32. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 27, further comprising the step of vetoing parse trees having conflicts between selectional features of concepts serving as arguments to a second concept and restrictions of said second concept.

33. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim ~~27~~29, further comprising the step of assigning numbers to said concepts.

34. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim ~~27~~33, further comprising the step of

subtracting said numbers to determine if features are in agreement, wherein a non-negative number indicates agreement.

35. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 33, further comprising the step of subtracting said numbers to determine if features are in agreement, wherein ~~when~~ a negative number indicates feature incompatibility.

36. (Original) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 27, further comprising the step of vetoing parse trees that fall below a minimum probability for semantic interpretation.

37. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 27, wherein ~~in said parameterized ontology~~ the step of converting the natural language sentence into the sequence of ontological entities includes data structures, wherein each data structure includes an integer value, where each digit of said integer value corresponds to a specific branch taken at a corresponding level in said a parse tree.

38. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim ~~27~~37, further comprising the step of encoding ~~said parameterization~~ in two ways: a number of grouped digits and their numerical base bounds a number of branches extending from a root node of ~~said an~~ ontology, while at least one of said groups of digits in said integer value bounds a potential depth of said parse tree.

39. (Original) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 38, wherein a most significant digit difference between two nodes provides a measure of the degree of ontological proximity of two concepts.

40. (Currently Amended) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim ~~27~~37, further comprising the step of representing said parse trees by modified hexadecimal numbers that have an octet of hexadecimal pairs to provide eight ontological levels and a branching factor at each node of 256.

41. (Original) A system for ontological parsing that converts natural-language text into predicate-argument format as recited in claim 23, wherein said predicates and arguments are represented by encodings comprising at least one digit separated into multiple groups to provide multiple ontological levels and a branching factor at each node.

42. (Original) A method of ontological parsing that converts natural-language text into predicate-argument format as recited in claim 27, further comprising the step of representing said predicates and arguments by encodings comprising at least one digit separated into groups to provide multiple ontological levels and a branching factor at each node.